

WHAT IS CLAIMED IS:

1. A method for reading and storing data by means of a direct memory access (DMA) medium, comprising the steps of:

5 deciding a shift direction and a predetermined number of bits to be shifted in advance when a request is made so that data read from a first storage medium can be processed; and

sequentially storing bit strings configuring the read data in a register, shifting the bit strings by the predetermined number of bits in the decided shift direction, and transferring the shifted bit strings to a second storage medium.

10 2. The method as set forth in claim 1, wherein each of the bit strings configuring the read data is configured by one of an 8-bit string, a 16-bit string or a 32-bit string.

3. The method as set forth in claim 2, wherein the number of bits to be shifted has a value of from 0 to 7.

15 4. The method as set forth in claim 3, wherein the step of deciding the shift direction and the number of bits to be shifted depends upon bit values set by the DMA medium.

5. The method as set forth in claim 1, further comprising the steps of:
classifying the bit strings configuring the read data into more significant bit strings and less significant bit strings; and

20 rearranging positions of less and more significant bit strings and writing the read data to the second storage medium according to a result of the rearrangement.

6. The method as set forth in claim 5, wherein the read data is configured in the form of 32 bits at the step of rearranging the positions of the less and more significant bit

strings.

7. The method as set forth in claim 6, wherein the step of rearranging the positions of the less and more significant bit strings depends upon bit values set by the DMA medium.

5 8. An apparatus for reading and storing data by means of a direct memory access (DMA) medium, comprising:

 a first storage medium for storing data read in a source address;

 the DMA medium for deciding a shift direction and a predetermined number of bits to be shifted in advance when a request is made so that the read data can be processed,
10 sequentially storing bit strings configuring the read data in a register, shifting the bit strings by the predetermined number of bits in the decided shift direction, and transferring the shifted bit strings; and

 a second storage medium for storing data transferred from the DMA medium.

 9. The apparatus as set forth in claim 8, wherein the DMA medium reads each of
15 the bit strings configuring the read data with one of an 8-bit string, a 16-bit string or a 32-bit string.

 10. The apparatus as set forth in claim 9, wherein the DMA medium carries out a shift operation according to the number of bits to be shifted that has a value of from 0 to 7.

20 11. The apparatus as set forth in claim 10, wherein the DMA medium decides the shift direction and the number of bits to be shifted according to set bit values.

 12. The apparatus as set forth in claim 8, wherein the DMA medium classifies the bit strings configuring the read data into more significant bit strings and less significant bit

strings, rearranges positions of less and more significant bit strings, and writes the read data to the second storage medium according to a result of the rearrangement.

13. The apparatus as set forth in claim 12, wherein the DMA medium rearranges the positions of the less and more significant bit strings when the read data is configured
5 in the form of 32 bits.

14. The apparatus as set forth in claim 13, wherein DMA medium rearranges the positions of the less and more significant bit strings according to set bit values.